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No. VIII.

PORTER'S PATENT ANCHOR.

The Thanks of the Society were voted to Messrs. **Porter** *and* Co., 149 *Cheapside, for their Communication respecting their Patent Anchor ; a Model of which has been placed in the Society's Repository.*

Sir, 149 *Cheapside, April* 20, 1842.

The model of the Patent Anchor that we have had the honour of leaving with you, we beg to have submitted to the Committee of Mechanics at their next assembly, for consideration of its merits, and the value and utility of the invention.

This anchor has been in use in the royal navy during three years ; and so satisfied have been the Lords of the Admiralty of its qualifications that, by their command, most of the ships lately fitted out have been supplied with it.

Orders have been received from the French government, and the Russian and Neapolitan also are about to have it put on board several of their large frigates.

From the favourable reception it has likewise met with in the merchant service, we feel fully justified in claiming for it a great superiority over anchors constructed in the ordinary manner; and, begging to refer you to its advantages as set forth in the pamphlet, and the reports given of its efficiency in service, we trust that it may be considered approvingly by the gentlemen of your Society.

Those who have actually tested its merits are now at sea, with the exception of Captain Washington, R.N., formerly secretary of the Geographical Society; and we fear that his duties will call him from Woolwich before the subject can be brought forward at your board, as we have reason to think that he will sail on Saturday next.

Should we hear of others being on shore, we will take the liberty of handing in their names.

We are, Sir, &c.

W. A. Graham, Esq. Porter & Co.

Fig. 1 shews the position of the anchor when canted.

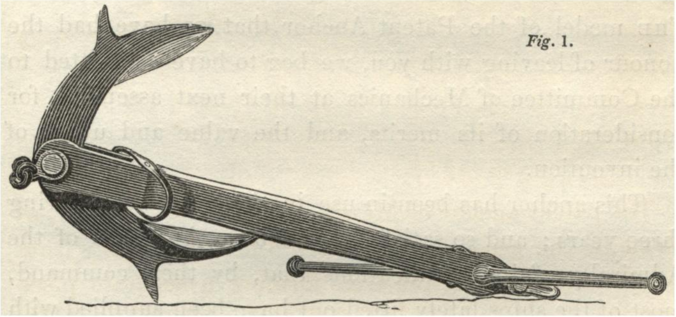


Fig. 1.

Fig. 2 shews the action of the toggle, which has brought the under pea from the shank to the ground, in the position to enter.

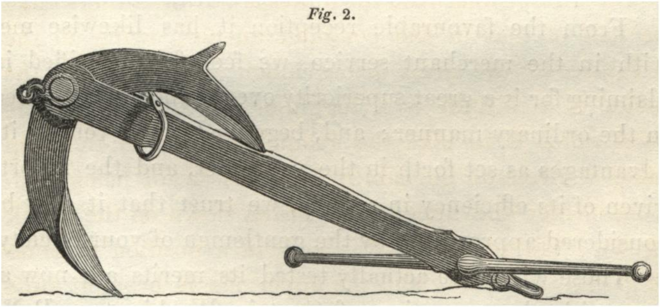
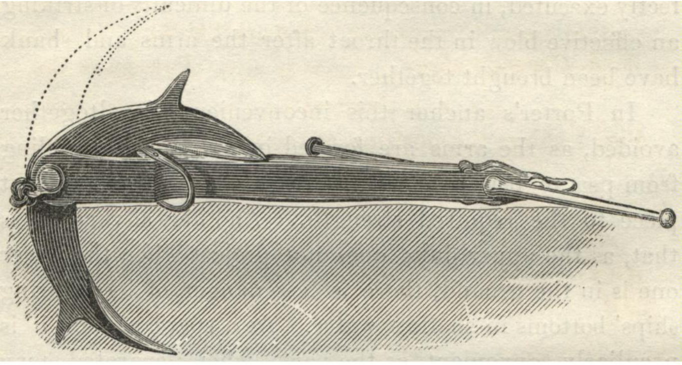


Fig. 2.

Fig. 3 presents a view of the anchor in the ground, with the upper pea on the shank, in which position it remains. The dotted lines shew the position in which the upper arm of a common anchor would be if placed by its side.

Fig. 3.



The patent anchor of Messrs. Porter and Company, as shewn in the accompanying cuts, differs essentially from those in ordinary use, the arms forming a separate piece from the shank, which is forked, to receive the middle portion of the arms, through which a pin runs to hold them within the fork, and which pin serves as a pivot or centre, on which the arms move.

The distance between the flukes is but little more than one half of that in the common anchor, owing to the curvature of the arms being much quicker. On the outside of each fluke is a toggle or projecting point, the use of which is to take the ground as soon as the ship makes a strain on the cable; and this strain being continued brings the upper fluke nearly down on the shank (fig. 2). The under fluke is now in a position to enter the gravel, rock, &c., and the upper one is brought quite down upon the shank, where it finds an abutment, thus relieving, to a considerable extent, the strain upon the shank at the throat, which is the point at which the common anchors generally give way; the reason of which is owing to the necessity of welding the arms at their junction with the shank, and the weld being often imperfectly executed, in consequence of the difficulty of striking an effective blow in the throat after the arms and shank have been brought together.

In Porter's anchor this inconvenience is altogether avoided, as the arms are formed in one piece extending from pea to pea, and the shank is also an independent piece to the required strength. Another advantage is that, as the upper fluke does not project when the lower one is in the ground, there is less danger of its injuring ships' bottoms in shallow water. As a spare anchor it is peculiarly convenient, as the parts, when separated, may be easily stowed away in the hold of the ship.

The following may be quoted as among the numerous satisfactory tests to which this anchor has been subjected, shewing that it is nearly treble the strength of other anchors.

The trials took place in Her Majesty's dockyard at Woolwich, on the 30th March, 1841, and 22d February, 1842.

PATENT ANCHOR.

Weight.	Admiralty Proof.	Sustained.
5 cwt	8¼ tons	21½ tons
28 —	27⅛ —	60½ —

Which latter was a condemned anchor for service, and stood within 7½ tons of a first-rate anchor of 96 cwt., made on the old principle, which was broken on the same occasion at 68 tons strain, the required proof being 66 tons.

The following is among the numerous testimonials in favour of the Patent Anchor :—

Marine Surveyor's Department, Port Fleetwood,
January 1, 1842.

Having had under trial Porter's patent anchors, and subjected them to the most treacherous holding ground, great tidal jerks, and effect of eddies, as well as working round by steam paddle, to foul them if I could, I am now enabled to state that anchors so constructed will present to the mariner the combined essentials so long looked for. I need only enumerate the following:

It is almost impossible to foul it.

It bites quickly into the most stubborn ground.

It holds on to the shortest stay-peak.

It cannot well lodge on its stock-end.

It presents no upper fluke to injure the vessel herself, or others, in shoal water.

It cannot injure vessels' bows when hanging a cock bill, as merchant vessels find a convenient practice.

It is not so likely to break off an arm or part in the shank, as anchors with fixed flukes do, because the construction of these arms can be of continuous rod-iron, and the leverage is so much nearer the ring, owing to the pea of the upper fluke closing upon the shank.

It is a most convenient anchor for stowing in board on a voyage, as the flukes can be easily separated, and passed into the hold; it can as easily be transported by *two* boats, when one would be distressed with the whole weight.

It produces the desired effect of ground tackle at less weight. Wishing it general adoption,

I remain yours truly,
H. M. Denham, Com., R.N., F.R.S.
Consulting Marine Surveyor.

To the Patentee of Porter's Improved Anchor,
149 *Cheapside, London.*